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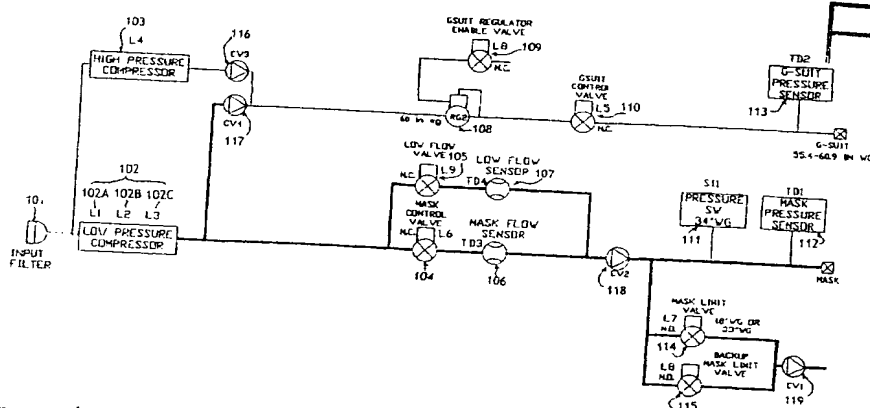
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(54) Title: COMBINED AIRCREW SYSTEMS TESTER (CAST)



(57) Abstract: The present invention enables functional testing nearly all aircrew equipment including a COMBAT EDGE (combined advanced technology enhanced design "G" ensemble) system of components which include a mask, a G-suit, communication systems, and a goggle. The present invention includes a gas system which includes an input filter (101), a first compressor (102) comprising at least one blower, preferably three blowers connected in series, a second compressor (103), a first flow sensor (106), a second flow sensor (107), a first flow valve (104), a second flow valve (105), a regulator (108), a first pressure sensor (112), a second pressure sensor (113), a first pressure valve (110), a second pressure valve (114), and a controller. The inlet filter (101) is designed to accept a chemical filter. The second compressor (103) produces a lower flow at a higher pressure than the first compressor (102). This combination works particularly well when inflating the G-suit because when the G-suit inflates, initially there is a large change in volume without much change in pressure, and then, as the G-suit fills out and becomes firm, the change in volume slows down and the rate of the pressure increases. The present invention includes a digital indicator. A method of operating the tester and the gas system are also disclosed. The present invention includes a normal breathing test, a preflight test, a G-suit leak test and two dynamic flow leak tests. The communication system test and goggle test are further included.

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